"Perina, Tom/RIV"
<Tom.Perina@CH2M.com>
02/14/2005 05:07 PM

To Christopher Lichens/R9/USEPA/US@EPA
cc
bcc
Subject comments

CDM 3 Feb 2005 Prelim Eval of Nov 2004 Soil Gas Results - review comments 021005.pdf

CDM 3 Feb 2005 Prelim Eval of Nov 2004 Soil Gas Results - review comments 021005.doc

MEMORANDUM **CH2MHILL**

Review Comments on *Preliminary Evaluation of Soil Gas Results from November 2004, Omega Chemical Superfund Site.*

TO: Christopher Lichens/USEPA Region IX

FROM: Tom Perina/CH2M HILL, Riverside
Mike Grigorieff/CH2M HILL, Santa Ana
Richard Braun/CH2M HILL, Santa Ana

DATE: February 10, 2005

As you requested, CH2M HILL reviewed the document prepared by Camp Dresser & McKee, Inc. (CDM), dated February 3, 2005, titled *Preliminary Evaluation of Soil Gas Results from November 2004, Omega Chemical Superfund Site.* CDM prepared the subject document on behalf of the Omega Chemical Site PRP Organized Group (OPOG).

Consistent with the oversight role of the U.S. Environmental Protection Agency (EPA), this technical memorandum presents recommendations that CH2M HILL believes will streamline and improve the project. The goal of this review is to confirm that the approach to the investigation is appropriate and consistent with the goals at this site and is consistent with typical industry practices.

This review lists comments sequentially as noted in the document. Editing-level issues are not addressed in this review.

1. The soil gas sampling results clearly indicate that contaminated soils exist outside of the investigated area. VOC presence in soil gas is considered an indication of soil contamination because of VOC partitioning between soil gas, water, and organic carbon in soil (e.g., Sec. 3.1). Additional soil-gas and/or soil samples need to be collected to define the lateral extent of the soil contamination.
2. Section 3.1 makes reference to Table 3-1 which is not included in the report.
3. The following two buildings are located within a contaminated area: Building SE of Terra Pave, SW of Skateland and the tall building SE of Fred Rippy parking lot (across Putnam Street from the first building)). Indoor air samples need to be collected from these two buildings.
4. Statements in Section 2, excerpted below (in italics)

   During sampling of the deeper intervals (18 – 24 feet) at the 3 Kings leased portion of the Omega Site, it was noted that the Geoprobe unit had to use the hammer to drive the probe beginning at about 18 feet (as opposed to just using the weight of the truck to drive the probe). This indicated the presence of soils with lower permeability at these depths. This conclusion was supported during the soil gas sampling at the 24-foot sample depth at two locations (SG-8 and SG-9) by the fact that the summa canisters filled very slowly.

seem contradictory to statements in Section 3.2, excerpted below,

These general trends indicate that soil gas VOCs are likely emanating from deep (>24 feet) subsurface soil and/or groundwater. Data that will be collected from the proposed SVE pilot testing will include VOC extraction rates from various depths at the site. These data will further help to determine the relative vertical distribution of VOCs in the vadose zone, as well as provide a basis to design a full-scale SVE system, if appropriate.

regarding the presence of lower permeability soils beginning at about 18 feet and the concept of VOCs likely emanating from deeper sources (at depths greater than 24 feet).

5. Because of the presence of PCE, TCE, and freons, the sample results indicate that the contaminants in soil gas originated from the former Omega property. The review considers the collection of additional samples to be more beneficial to the site characterization than further interpretation of the soil gas sampling results (i.e., the relative composition of VOCs).

   There is an apparent increase in the relative content of Freon 113 with the sample distance from the former Omega property (e.g., samples SG-13, SG-14, and SG-15 compared to SG-7, SG-8, and SG-9; and samples SG-1, SG-2, and SG-3 compared to SG-4, SG-5, and SG-6). This may be due to the higher volatility of Freon 113 compared to PCE, TCE, and Freon 11 and may indicate lateral vapor transport pathway rather than a Freon source at the Medlin property (Sec. 3.3.1, 5th bullet).

   The review notes that the sampling was conducted in April and November of 2004. Because the composition of soil gas and contaminant vapors changes with seasons (with changes in atmospheric air temperature and humidity, and with changes in soil moisture and temperature), the interpretation of the concentrations and relative content of contaminants in the air and soil gas samples is not conclusive (Sec. 3.2). Differences in the relative composition of PCE, TCE, and freons in the soil gas samples collected at different locations are expected based on their Henry's Law constants and partitioning coefficients.

6. Sec. 3.3.1, 2nd bullet: The relative composition of the 24-foot sample from SG-9 is not shown. Refer to Figure 3-1 unless a new figure for deep samples is presented.